ASPECTS OF THE MANAGEMENT OF CHRONIC PAIN ILLUSTRATED BY NINTH NERVE BLOCK

Case Report

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SUMMARY

Glossopharyngeal nerve block, with radiological control, was used to relieve severe pain due to oropharyngeal carcinoma. The clinical course of this patient illustrated the need for early block to obviate the development of narcotic addiction. General principles in the management of chronic pain due to malignancy, as illustrated by this report, are discussed.

Glossopharyngeal nerve block is infrequently performed because of the apparent complexity of the anatomy, but it can be reasonably simple if radiological control is utilized. Malignancy in the pharyngeal and tongue region is associated with one of the most severe forms of pain which results from the disease itself, radical head and neck surgery and radiation therapy. The case to be described was of interest because of the infrequency of performance of ninth nerve block, the demonstration of the value of radiological control in this technique and the illustration of the necessity for early block to obviate the development of narcotic addiction.

CASE REPORT

This 44-year-old male was referred to the pain clinic for assessment of severe pain of 6 months’ duration at the base of the tongue and adjacent right oropharynx associated with carcinoma in this region. His pain, in the distribution of the ninth nerve, followed right radical neck dissection and subsequent radiation therapy and was of such severity that morphine 120 mg daily provided only partial relief. A plan of management was outlined with the ENT surgeon in charge of the patient: temporary glossopharyngeal nerve block with local anaesthetic and then, if this provided satisfactory analgesia, a permanent block with absolute alcohol. Consent was obtained and, with the patient awake and using radiological control for accurate needle placement, a block was performed using 3 ml of 0.8 per cent lignocaine with 1:200,000 adrenaline and 0.2 per cent amethocaine. No narcotic had been administered for 8 hours before the block and the patient was experiencing intense pain at the time. He received complete pain relief which lasted approximately 3 hours and subsequently expressed his desire to have a permanent block. He was fully informed about the possible side effects, including increased intensity of pain, loss of taste sensation, dysphagia, hoarseness and haemorrhage. Written consent was obtained and, 10 days after the initial block, an alcohol block of the right glossopharyngeal nerve was performed under general anaesthesia, using 1 ml of absolute alcohol.

For 5 days the patient was absolutely pain-free as his morphine dosage was being tapered. He did develop some tongue weakness and hoarseness, but accepted this readily in return for the absence of pain. On the fifth post-block day he developed signs of narcotic withdrawal: tremor, anxiety, diaphoresis, and tachycardia, which necessitated reinstatement of narcotic therapy. At this time he also had the feeling that some pain was returning, but when tested objectively in the oropharynx and at the base of the tongue, he was anaesthetic in the proper distribution of the ninth nerve.

Technique of block.

The ninth nerve was blocked at the jugular foramen (Bonica, 1954). The most satisfactory position was with the patient supine and the head in a straight antero-posterior position. Turning the head to the side increased the difficulty of accurate needle placement. The landmarks used for this block were the mastoid process and the angle of the mandible: a line drawn between these two points was bisected to place the entry point of the needle just below the external auditory meatus. At this point a 25-gauge 5-cm needle was inserted perpendicular to the skin to a depth of approximately 2 cm. No attempt was made to contact the styloid process as this structure varies greatly in size. During the initial block with lignocaine both lateral and submental X-ray views of the skull were obtained and examined with a radiologist. The lateral view confirmed that the needle was posterior to the styloid process (fig. 1) and the submental view showed it was approaching the jugular foramen. The needle was then advanced another 2 cm and a repeat submental view showed that its tip was placed at the jugular foramen (fig. 2). The local anaesthetic was

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then injected. These X-rays were used for comparison with those subsequently taken for needle placement during the alcohol block and, for the same purpose, needle depth was noted. For the alcohol block, when comparison of X-rays and needle depth indicated that the needle was in the appropriate position, 1 ml of absolute alcohol was injected.

DISCUSSION
The management of this patient with pain in the distribution of the ninth nerve illustrates several important considerations in dealing with any pain problem in addition to those unique for this particular nerve. It was elected to block the nerve posteriorly at the jugular foramen where it is in close association with the vagus, accessory and hypoglossal nerves, to all of which the blockade frequently extends. When an alcohol block is planned, the patient must be highly motivated and must understand the possible complications. An initial double-blind assessment of the efficacy of placebo compared to local anaesthetic

is one approach advocated prior to permanent alcohol block. However, there is a strong argument that it should not be used in this type of block because of the hazards of multiple needle placements in a very vascular area and the discomfort to the patient. Therefore, when complete analgesia with local anaesthetic block was achieved in this patient, this was considered sufficient information to proceed to permanent alcohol block in view of the severity of his pain and the presence of malignancy.

Another consideration emphasized by this report is that pain due to malignancy should be relieved by nerve block before narcotic addiction develops. In addition, alcohol block prior to radiation therapy can prevent the severe pain that often ensues. Unfortunately, many patients with terminal malignancy rely on pain as a buffer between them and their disease, and removal of their pain by nerve block leaves them only with their malignancy. Not
infrequently, these patients have an unconscious need to substitute another buffer, such as narcotic therapy, for their pain. Objective testing of the patient reported here revealed a complete block of the ninth nerve with a partial block of the tenth and twelfth nerves, producing mild hoarseness and dysphagia, respectively. Successful block was also supported by the complete freedom from pain experienced by the patient for the first 5 days. The subsequent narcotic withdrawal reaction at first confused evaluation of the block, but it then became apparent that this patient was addicted to narcotic and despite successful block would require continuation of narcotic therapy for the rest of his days. The value of methadone therapy in such a situation has not yet been established.

In the absence of the narcotic withdrawal syndrome, the “gate theory” of pain mechanisms (Melzack and Wall, 1965) may provide an alternative explanation for a patient’s complaint of persistent pain after seemingly successful alcohol nerve block. It has been postulated that, once a painful situation has persisted for a long time, the spinal cord “gates” may be set in the “open” position. Subsequent peripheral nerve block may fail to abolish pain because even the minimal amount of normal sensory traffic from adjacent neural areas will be interpreted centrally as pain in the area of the peripheral lesion.

It has been suggested that the best way of dealing with ninth nerve pain is by craniotomy and severing of the nerve as it exits from the skull (Grant, 1943). This procedure has a considerable mortality rate and it seems only reasonable, especially in the chronically ill patient who is a poorer surgical candidate, to first attempt to relieve pain by alcohol block. The mortality for alcohol block appears to be zero and the success rate is at least as good as and sometimes better than that for severance at craniotomy (Bonica, 1954).

REFERENCES

ASPECTS PRESENTES PAR LE TRAITEMENT DES ALGIES CHRONIQUES EN PRENANT POUR EXEMPLE LE BLOCAGE DU NEUVIEME NERF CRANIEN: OBSERVATION D’UN CAS

ZUSAMMENFASSUNG

ASPECTOS DEL TRATAMIENTO DE DOLOR CRONICO ILUSTRADOS POR EL BLOQUEO DEL NOVENO NERVIO: COMUNICACION DE UN CASO

RESUMEN
Fue utilizado el bloqueo del nervio glosofaríngeo, aplicando un control radiológico, para aliviar dolor intenso debido a un carcinoma bucofaríngeo. El curso clínico de este paciente ilustró la necesidad de un bloqueo precoz para evitar el desarrollo de una adicción narcótica. Son discutidos los principios generales en el tratamiento del dolor crónico debido a una neoplasia, tal como son ilustrados por esta comunicación.